

*A review of the experience of the metropolis during the pre-war, war, and postwar periods points to the need for continuing control programs.*

# Venereal Disease Control in New York City

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THE recent downward trends in the incidence and prevalence of venereal disease in New York City have been observed also in other parts of the United States (1-3). Confirmatory evidence from the autopsy table is provided by Bell (4), who found marked declines in mortality due to syphilis in the past two decades. Improved methods of diagnosis, treatment, public health education, and administrative control have undoubtedly contributed to this reduction of the venereal disease problem.

Previous reports (5-9) have described in detail the character of the New York City venereal disease control program and have presented statistical data on its progress. The present report completes this information through 1954, thus providing a continuing record from 1938.

## Early Control Activities

The historical background of the present venereal disease control program in New York City may be of interest. The first action in dealing with the venereal diseases as a public health problem in the city was initiated by

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Biggs in 1912 (10). His program embraced the following pioneer steps:

1. Making syphilis and gonorrhea reportable diseases.

2. Offering diagnostic laboratory tests (including serologic tests for syphilis) for venereal disease to all physicians in the city without charge.

3. Advocating establishment by the health department of special clinics for diagnosis and treatment of venereal disease. (These clinics were for diagnosis and advice only. Five years later, in 1917, treatment was included in the services of the health department clinics also.)

4. Providing special hospital facilities for venereal disease cases.

5. Carrying on an educational campaign against patent nostrums and quackery in the field of venereal diseases. An attempt was made to follow Biggs' recommendations; inadequate staff prevented the full development of this forward-looking program for a score of years.

In 1935, a survey by the American Social Hygiene Association revealed the startling information that there were over 1 million men, women, and children in New York City suffering with syphilis or gonorrhea (378,000 with syphilis and 750,000 with gonorrhea), one-fifth of whom were infectious. The survey also revealed that 700 residents of New York City were being admitted annually to State hospitals for general paresis and other syphilis of the central nervous system.

During the period 1912-35, venereal disease control in the New York City Department of Health was a responsibility of the bureau of preventable diseases. In 1935, based on the

survey and recommendations of the American Social Hygiene Association, a separate bureau of social hygiene was created to administer the venereal disease control program. Under a full-

**Table 1. Cases of syphilis reported in New York City, calendar years 1938-54**

Year	Estimated population in thousands	Number of cases									
		Total		Primary or secondary		Early latent <sup>1</sup>		Congenital		Other <sup>2</sup>	
		Number	Rate <sup>3</sup>	Number	Rate <sup>3</sup>	Number	Rate <sup>3</sup>	Number	Rate <sup>3</sup>	Number	Rate <sup>3</sup>
1938	7,363	37,077	503.6	5,051	68.6	1,400	19.0	1,654	22.5	28,972	393.5
1939	7,416	32,874	443.3	3,411	46.0	2,054	27.7	1,467	19.8	25,942	349.8
1940	7,466	30,718	411.4	3,113	41.7	3,798	50.9	1,135	15.2	22,672	303.7
1941	7,510	27,194	362.1	2,957	39.4	4,720	62.8	966	12.9	18,551	247.0
1942	7,553	30,036	397.7	3,406	45.1	5,288	70.0	940	12.4	20,402	270.1
1943	7,597	25,878	340.6	4,252	56.0	5,551	73.1	651	8.6	15,424	203.0
1944	7,641	23,069	301.9	4,841	63.4	5,612	73.4	572	7.5	12,044	157.6
1945	7,684	22,690	295.3	5,164	67.2	6,162	80.2	583	7.6	10,781	140.3
1946	7,728	26,765	346.3	6,063	78.5	7,338	95.0	558	7.2	12,806	165.7
1947	7,772	26,303	338.4	5,009	64.4	6,610	85.0	566	7.3	14,118	181.7
1948	7,815	25,366	324.6	3,846	49.2	6,045	77.4	645	8.3	14,830	189.8
1949	7,859	20,489	260.7	2,218	28.2	4,479	57.0	533	6.8	13,259	168.7
1950	7,903	21,795	275.8	1,304	16.5	4,081	51.6	488	6.2	15,922	201.5
1951	8,042	22,458	279.2	801	10.0	3,461	43.0	545	6.8	17,651	219.5
1952	8,086	25,078	310.1	784	9.7	3,177	39.3	530	6.6	20,587	254.6
1953	8,078	25,224	312.2	658	8.1	2,637	32.6	456	5.6	21,473	265.8
1954	8,041	19,412	241.4	617	7.7	2,183	27.1	390	4.9	16,222	201.7

<sup>1</sup> Known as "other early syphilis" in 1938 and 1939.

<sup>2</sup> Includes late latent, late, and stage unknown.

<sup>3</sup> Per 100,000 population.

**Table 2. Cases of gonorrhea, chancroid, granuloma inguinale, lymphogranuloma venereum, and nonspecific urethritis reported in New York City, calendar years 1938-54**

Year	Estimated population in thousands	Gonorrhea		Chancroid		Granuloma inguinale		Lymphogranuloma venereum		Nonspecific urethritis	
		Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>
1938	7,363	12,935	175.7	164	2.2	-----	-----	242	3.3	-----	-----
1939	7,416	12,810	172.7	178	2.4	-----	-----	281	3.8	-----	-----
1940	7,466	14,639	196.1	288	3.9	55	0.7	258	3.5	-----	-----
1941	7,510	12,297	163.7	430	5.7	98	1.3	292	3.9	-----	-----
1942	7,553	12,032	159.3	529	7.0	97	1.3	242	3.2	-----	-----
1943	7,597	12,957	170.6	410	5.4	97	1.3	187	2.5	-----	-----
1944	7,641	14,489	189.6	310	4.1	145	1.9	202	2.6	-----	-----
1945	7,684	18,009	234.4	356	4.6	141	1.7	212	2.8	-----	-----
1946	7,728	24,350	315.1	522	6.8	161	2.1	233	3.0	-----	-----
1947	7,772	22,746	292.7	813	10.5	149	1.9	231	3.0	-----	-----
1948	7,815	23,422	299.7	562	7.2	170	2.2	224	2.9	-----	-----
1949	7,859	20,309	258.4	377	4.8	96	1.2	179	2.3	-----	-----
1950	7,903	16,784	212.4	221	2.8	78	1.0	172	2.2	-----	-----
1951	8,042	14,114	175.5	181	2.3	79	1.0	165	2.1	149	1.9
1952	8,086	12,105	149.7	194	2.4	50	.6	139	1.7	191	2.4
1953	8,078	12,505	154.8	255	3.2	45	.6	82	1.0	847	10.5
1954	8,041	12,379	153.9	159	2.0	37	.5	68	.8	1,238	15.4

<sup>1</sup> Per 100,000 population.

time bureau director, many of the recommendations made in the survey report were carried out. Among the most important were the following:

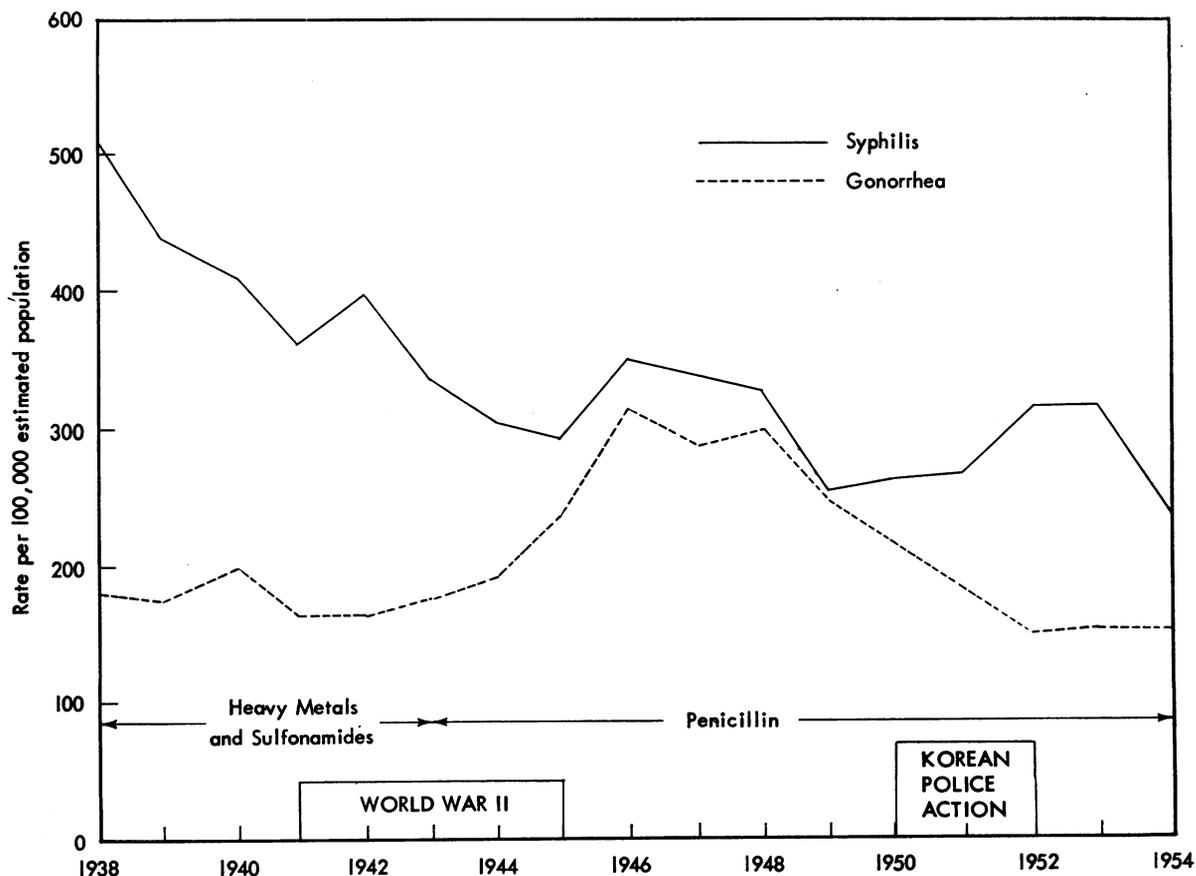
1. Increase of laboratory services to aid physicians in the diagnosis of persons infected with venereal diseases.
2. Establishment of a consultation service to advise practicing physicians in the handling of their venereal disease patients.
3. Expansion of case-finding and case-holding services.
4. Utilization of all available media to educate and inform the public as well as to provide technical instruction to physicians, nurses and others.
5. Improvement in reporting procedures.
6. Provision of free drugs to hospitals, clinics, and private physicians.
7. Cooperation with other departments of city, State, and Federal governments and with voluntary institutions and professional groups.

In addition, a comprehensive research program was carried out, including investigations on intensive treatment methods in early syphilis, evaluation of drugs in the treatment of syphilis, and fundamental studies in lymphogranuloma venereum and granuloma inguinale.

#### Modern Control Program

Several years were required to familiarize physicians and personnel in hospitals, clinics, and laboratories with their basic responsibilities concerning morbidity reporting. For this reason, morbidity statistics for the venereal diseases prior to 1938 are not completely reliable; as a matter of fact, syphilis cases were tabulated merely on the basis of positive serologic reactions in the laboratories of the health department. Since 1938, however, the morbidity reporting system has been on an efficient and reliable basis, eliminating to as great an extent as possible all duplications. Specially trained

Figure 1. Newly reported syphilis and gonorrhea cases, New York City, 1938-54.



physicians have been available since 1935 to consult with practitioners throughout the city on any phase of their venereal disease problems. This has tended to improve accuracy and completeness in reporting.

Local public health regulations contained in section 88 of the New York City sanitary code, supplemented by article 17B of the New York State public health law, provide for control of infected persons, morbidity reporting by physicians and institutions, and reporting of positive laboratory findings by clinical laboratories.

*The Prewar Period, 1938-41*

Tables 1 and 2 present in detail the number of reported cases and rates per 100,000 population for each venereal disease reported in New York City during the period 1938-54. The year 1938 marks the first year that these data may be considered to be reliable. In that year, 37,077 cases of syphilis were reported, a rate of 503.6 per 100,000. In the same year, almost 13,000 cases

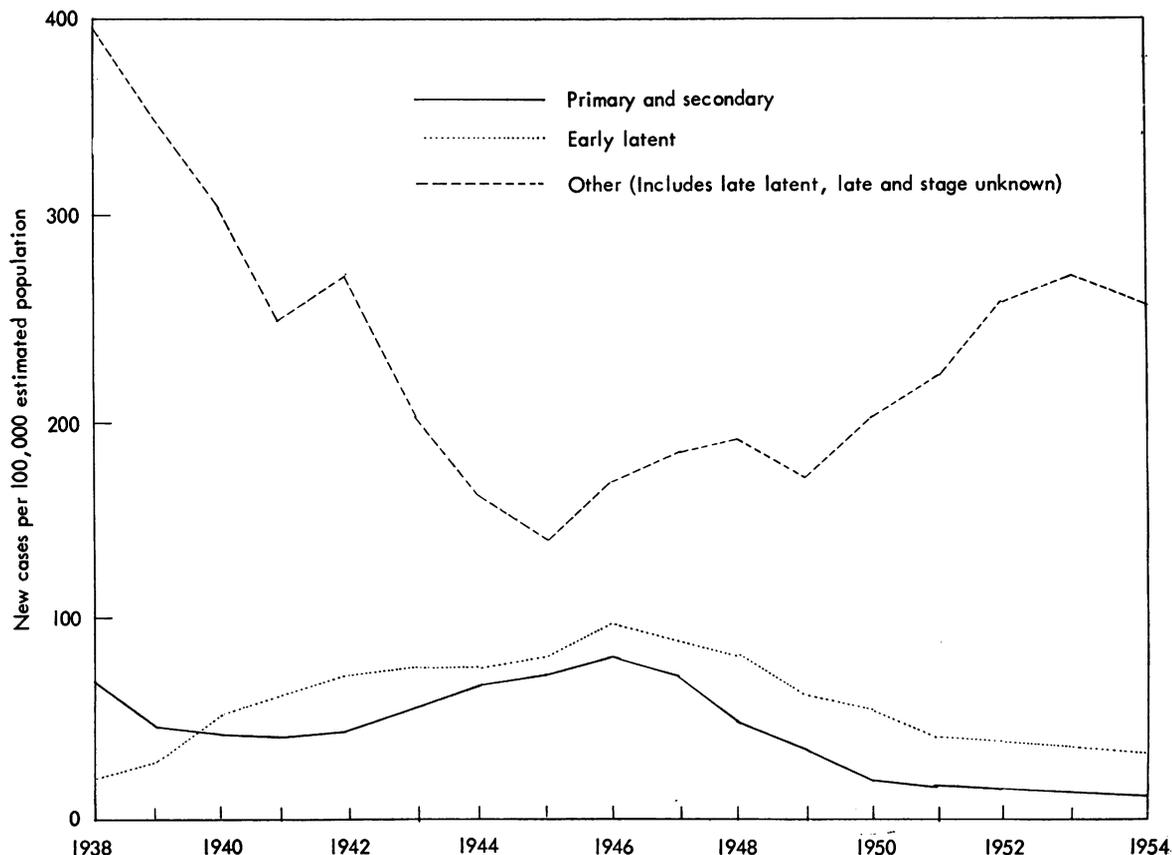
of gonorrhoea were reported, representing a rate of 175.7 per 100,000.

From 1938 to 1941, the number of reported cases of syphilis steadily declined to 27,194, the rate falling to 362.1 per 100,000. There had been close cooperation with the Selective Service System for distribution of social hygiene literature to prospective registrants. Educational activities had been increased throughout the city and every possible aid, such as films, lantern slides, posters, and pamphlets, had been made available to the various military installations located within the city.

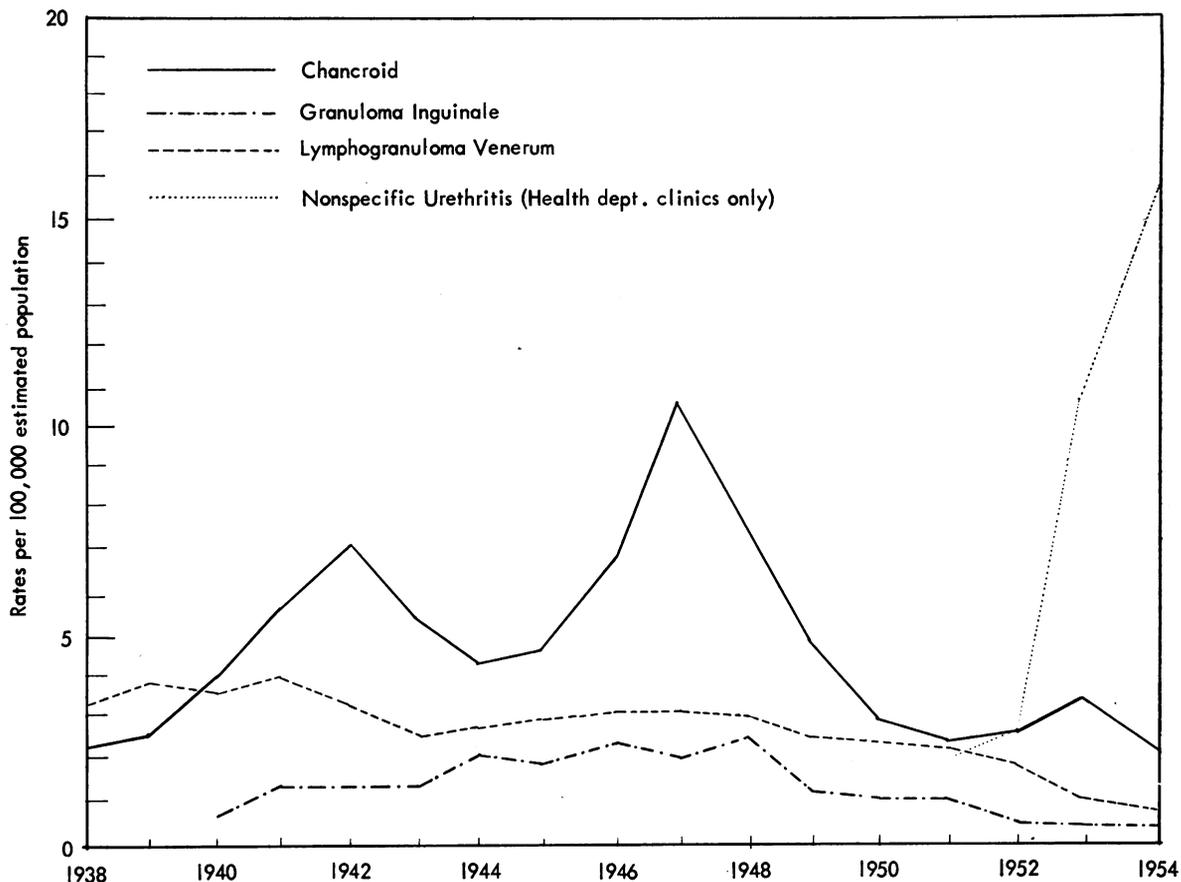
Syphilis was declining in New York City at a fairly rapid rate even before the advent of penicillin. It is felt that this decline resulted from the comprehensive control measures that had been in effect since 1935. Primary and secondary syphilis declined almost 50 percent in this same period.

During this period, there was little change in the reported number of cases of gonorrhoea.

**Figure 2. Syphilis cases, by stage of disease, New York City, 1938-54.**



**Figure 3. Newly reported cases of chancroid, granuloma inguinale, lymphogranuloma venereum, and nonspecific urethritis, New York City, 1938-54.**



Apparently control measures that were effective against syphilis had little effect against gonorrhea. The same could also be said for chancroid since this disease appeared to be increasing steadily each year so that, in 1941, the rate was 5.7 per 100,000, more than two and one-half times higher than in 1938.

It may be concluded, nevertheless, that the expanded venereal disease control program that was put into effect in 1935 was an important factor in preventing a rise in the incidence of syphilis and gonorrhea during the period of military and industrial mobilization just preceding the actual outbreak of World War II.

*The War Period, 1941-45*

With the country engaged in a global war, the problems of venereal disease control were multiplied enormously. Because New York City is a great seaport and railroad center, it became an important point of embarkation for

millions of soldiers. Soldiers and sailors flocked to the city nightly from the many nearby military installations. Industrial workers poured into the city by the thousands, attracted by the expanded industrial activity.

Close cooperation was maintained by the city with each branch of the military service. The Armed Forces Disciplinary Control Board was created at this time to secure even closer cooperation with civilian agencies charged with control of prostitution, sale of alcoholic beverages, and related matters. Reported venereal disease contacts of members of the armed forces who had allegedly been infected in the New York area were over 10,000 each year. Every effort was made to locate and secure the medical examination of the persons named as contacts (11), and approximately 60 percent of these were located.

During the war period, primary and secondary syphilis increased over 40 percent and early

**Table 3. Number and percentage of reported cases of syphilis and gonorrhea, by reporting agency, 1940-54**

Year	Syphilis							Gonorrhea						
	Total	Private physician		Health department clinics		Other		Total	Private physician		Health department clinics		Other	
		Number	Per cent	Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent	Number	Per cent
1940	30,718	11,274	36.7	12,136	39.5	7,308	23.8	14,639	3,092	21.1	6,248	42.7	5,299	36.2
1941	27,194	10,226	37.6	9,729	35.8	7,239	26.6	12,297	2,700	22.0	4,413	35.9	5,184	42.1
1942	30,034	11,638	38.7	9,566	31.9	8,830	29.4	12,023	2,095	17.4	4,762	39.6	5,166	43.0
1943	25,878	10,068	38.9	8,293	32.1	7,517	29.0	12,957	1,533	11.9	6,004	46.3	5,420	41.8
1944	23,069	9,653	41.8	5,631	24.4	7,785	33.8	14,489	2,104	14.5	6,904	47.6	5,481	37.9
1945	22,690	9,705	42.8	5,171	22.8	7,814	34.4	18,011	2,703	15.0	9,249	51.4	6,059	33.6
1946	26,765	10,212	38.2	7,538	28.1	9,015	33.7	24,350	2,894	11.9	15,073	61.9	6,383	26.2
1947	26,303	11,355	43.2	6,940	26.4	8,008	30.4	22,746	2,321	10.2	15,924	70.0	4,501	19.8
1948	25,366	11,531	45.5	6,273	24.7	7,562	29.8	23,422	2,991	12.8	15,079	64.4	5,352	22.8
1949	20,489	8,061	39.3	5,776	28.2	6,652	32.5	20,309	2,736	13.5	13,954	68.7	3,619	17.8
1950	21,795	8,198	37.6	4,987	22.9	8,610	39.5	16,784	2,369	14.1	11,570	68.9	2,845	17.0
1951	22,458	9,384	41.8	4,244	18.9	8,830	39.3	14,114	2,763	19.6	8,778	62.2	2,573	18.2
1952	25,078	10,607	42.3	3,489	13.9	10,982	43.8	12,105	2,280	18.8	7,332	60.6	2,493	20.6
1953	25,224	9,658	38.3	4,792	19.0	10,774	42.7	12,505	2,681	21.4	7,464	59.7	2,360	18.9
1954	19,412	7,816	40.3	2,626	13.5	8,970	46.2	12,381	1,476	11.9	8,446	68.2	2,459	19.9

latent syphilis increased over 20 percent. Tabulation of morbidity reports indicated early that syphilis was increasing, particularly in the younger age groups. Because of this, control measures were intensified (11). Gonorrhea rates also rose steeply, increasing from 163.7 in 1941 to 234.4 in 1945. The sulfonamides were being used for treatment; penicillin, though known to be effective, was in short supply and was reserved almost exclusively for the armed forces.

*The Postwar Period, 1946-54*

Following the close of the war, reports of communicable syphilis and gonorrhea continued to mount until peak levels for these diseases were reached in 1946. Since then, there has been a steady drop in reported cases. Some of the important reasons for this falling incidence are utilization of penicillin and other antibiotics, improvements in diagnostic procedures, and intensification of public health control activities. It was fortunate that at this time penicillin became freely available for civilian use. Its value against both syphilis and gonorrhea had already been well demonstrated by a number of studies in military and civilian institutions.

Improvements in laboratory procedures, such as the development of cardiolipin antigen and quantitative tests resulted in more accurate serologic tests for syphilis and better evalua-

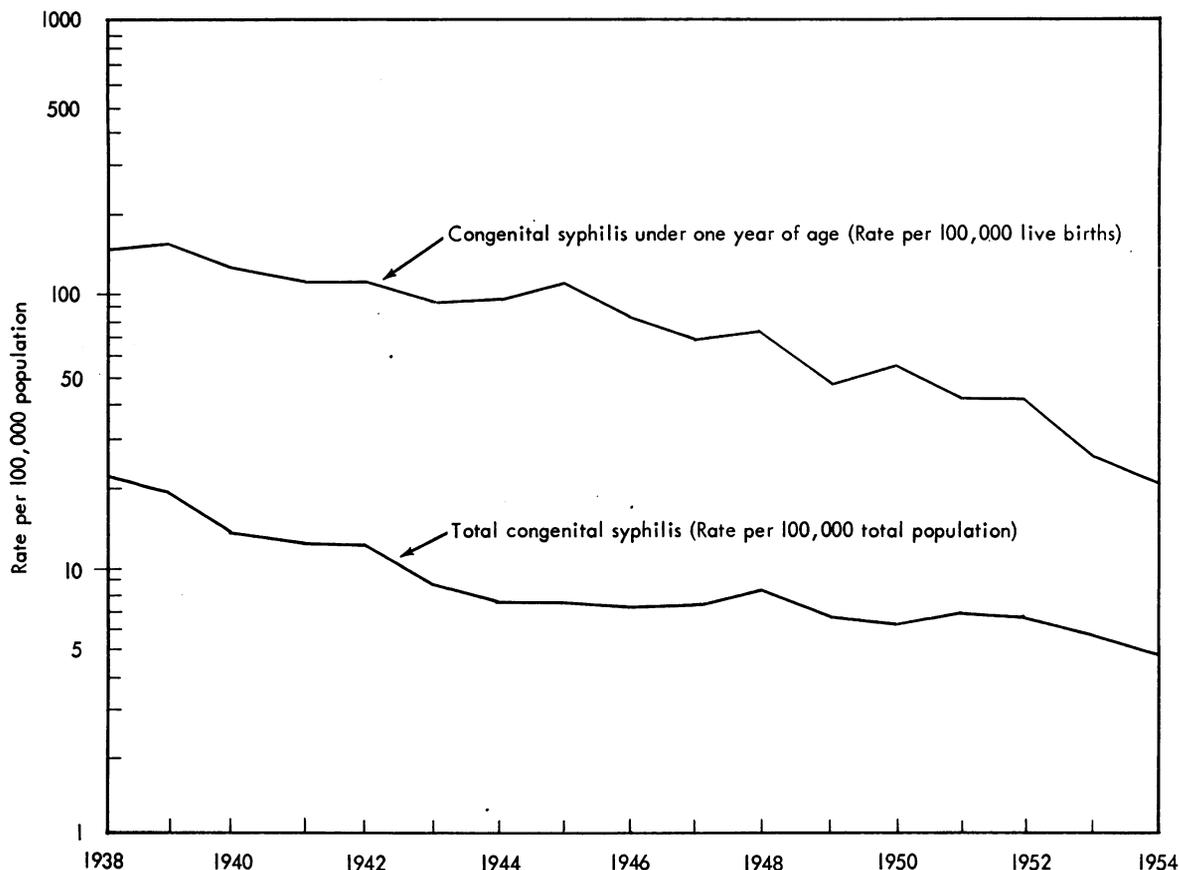
**Table 4. Newly reported cases of congenital syphilis, New York City, 1938-54**

Year	All ages <sup>1</sup>		Cases under 1 year	
	Number	Rate per 100,000 population	Number	Rate per 100,000 population
1938	1,654	22.5	159	162.0
1939	1,467	19.8	169	171.6
1940	1,135	15.2	141	136.2
1941	966	12.9	125	112.8
1942	940	12.4	144	112.3
1943	651	8.6	120	92.0
1944	472	7.5	116	97.5
1945	583	7.6	139	111.3
1946	558	7.2	123	82.8
1947	566	7.3	116	69.6
1948	645	8.3	115	74.8
1949	533	6.8	72	47.1
1950	488	6.2	85	55.9
1951	545	6.8	66	41.5
1952	530	6.6	67	41.8
1953	455	5.6	43	27.3
1954	390	4.9	33	20.6

<sup>1</sup> Includes age unknown.

NOTE: All cases of congenital syphilis are investigated for accuracy of diagnosis.

**Figure 4. Congenital syphilis cases, total and under 1 year of age, New York City, 1938-54.**



tion of the effectiveness of treatment. Improved culture methods were valuable in the diagnosis of gonorrhea, especially in females.

### Discussion

A general picture of the reported cases of the venereal diseases in the period 1938-54 may be obtained from figures 1-3. There was little change in the rates for newly reported cases of gonorrhea until 1942, when the rate began to climb slowly. After 1944, a sharp increase occurred, reaching a peak in 1946 about twice as high as that of 1942. For 2 years, until 1948, this high level was maintained. Then, for the next 4 years, the rate steadily fell until in 1952 it was back to about the 1942 level, where it has hovered ever since.

The total number of syphilis cases fell from a rate of 503 in 1938 to 295 in 1945. The fall was steady except for a moderate increase in 1942, when many latent cases were being discovered by medical examination of draftees.

Another increase occurred in 1946 but this was mainly due to an increase in early syphilis cases after the war. Again, the total syphilis figure began to decline, reflecting a decrease in primary, secondary, and early latent syphilis. After 1949, the rate for total syphilis again rose steadily, reaching a plateau in 1952-53. This last increase was due entirely to steadily increasing reports of late latent syphilis which overshadowed the decreasing reports of infectious cases. In 1954, for the first time since 1945, late and late latent syphilis reports fell sharply, producing a decided drop in the total syphilis rates from about 312 in 1953 to 241 in 1954.

The relationships of the various stages of syphilis to each other are better seen in figure 2. From a rate of 68.6 in 1938, primary and secondary syphilis fell to a rate of 39.4 in 1941. These cases then increased each year throughout the war into the postwar year 1946, when they reached their peak, a rate of 78.5. Since

this high point, the incidence has fallen each year during the succeeding 8 years. As the chart reveals, the descending curve has almost flattened out over the past 4 years. Nevertheless, the rate of 7.7 in 1954 is less than half the 1950 rate of 16.5.

The curve for early latent syphilis almost exactly parallels that of primary and secondary syphilis from 1940 to 1954, except that the rates for early latent syphilis run at a slightly higher level than those for primary and secondary syphilis. No attention should be paid to the 1938-40 rates for early latent syphilis, since during this period early latent syphilis was referred to as early syphilis and included only latent cases of less than 1 year's duration. Undoubtedly, if cases up to 4 years' duration had been included in this diagnosis, in accordance with accepted practice since 1940, the curve from 1938 to 1940 would be higher than that indicated in the chart.

Except for the year 1942, when there was a slight increase, "other" syphilis (which includes late latent, late, and stage unknown) dropped precipitously from a rate of 393.5 in 1938 to 140.3 in 1945. Thereafter, it rose steadily to a high point of 265.8 in 1953. A "mass street survey" in 1953 uncovered many cases of late latent syphilis, which helped to push the rate up to the highest level recorded since 1942. Many of these cases undoubtedly were acquired during the war years. In 1954, more than 5,000 fewer cases of late and late latent syphilis were reported than in 1953, the rate falling to 201.7.

Table 3 indicates the number of cases of syphilis and gonorrhea reported annually from each of the three reporting sources during 1940-54. Also indicated are the percentages of the total number of syphilis and gonorrhea case reports received annually from these reporting sources.

Figure 3 shows the rates for the minor venereal diseases, and indicates the postwar peak for these diseases.

Nonspecific urethritis is not reportable in New York City. In 1951, because of the relative increase of cases, it was decided to admit and treat these patients in health department clinics. Figure 3, therefore, by no means reveals the true incidence of this disease, since the rate refers only to patients admitted by health de-

partment clinics. In 1953, nonspecific urethritis made up 11.2 percent of the total number of cases of urethritis in males seen in these clinics, which, in 1954, was 15.3 percent of such cases.

In 1938, 1,654 cases of congenital syphilis in all ages were reported; 159 were under 1 year of age. There has been a gradual decline since that time so that in 1954, 390 cases of all ages were reported, with only 33 under 1 year of age (table 4 and fig. 4).

A parallel picture is seen in syphilis of the central nervous system. A tabulation of admissions of New York City residents to State mental hospitals for syphilis of the central nervous system shows a gradual decline. In 1933, 732 cases were admitted; a progressive reduction in numbers ensued each year, with 167 being admitted in 1953 (table 5).

Another index of the decline in venereal disease prevalence is furnished by the records of the Women's Court, where all women arrested on charges of prostitution are examined for venereal disease.

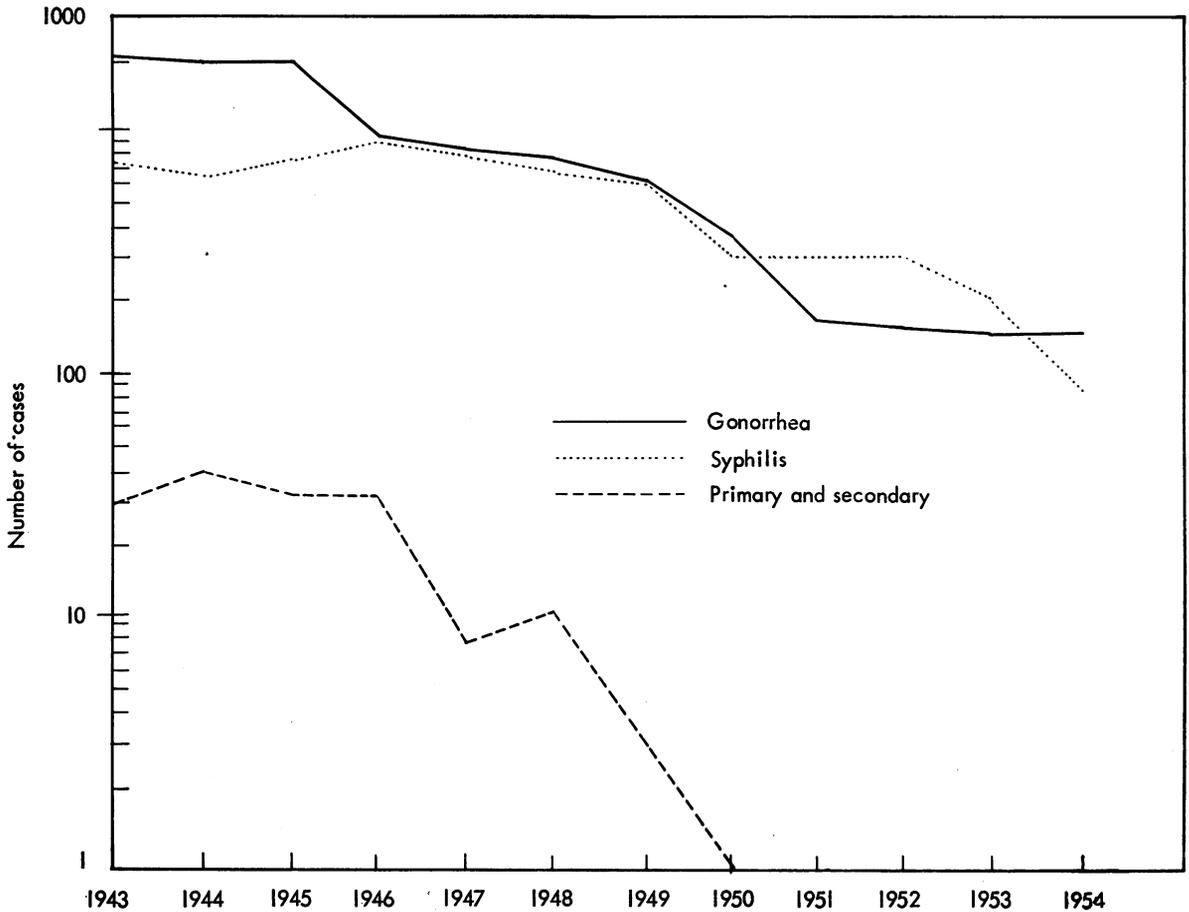
**Table 5. First admissions from New York City to New York State civil hospitals diagnosed as syphilis of the central nervous system, fiscal years 1933-53**

Fiscal year	General paresis and other syphilis of the central nervous system		
	Males	Females	Total
1933-----	579	153	732
1934-----	497	160	657
1935-----	551	159	710
1936-----	528	179	707
1937-----	566	183	749
1938-----	537	167	704
1939-----	561	186	747
1940-----	493	159	652
1941-----	473	186	659
1942-----	426	140	566
1943 <sup>1</sup> -----	309	104	413
1944-----	345	121	466
1945-----	333	140	463
1946-----	278	106	384
1947-----	270	107	377
1948-----	274	98	372
1949-----	215	85	300
1950-----	205	117	322
1951-----	192	79	271
1952-----	134	82	216
1953-----	98	69	167

<sup>1</sup> 9 months.

SOURCE: New York State Department of Mental Hygiene.

**Figure 5. Number of cases of primary and secondary syphilis, all syphilis, and gonorrhea diagnosed in all women coming to the Women's Court, New York City, 1943-54.**



A glance at figure 5 reveals the progressive decline in both syphilis and gonorrhea. In 1943, 34.8 percent of the women arrested were found infected with gonorrhea and 15.8 percent with syphilis. In 1954, 5.5 percent had gonorrhea, whereas only 3.4 percent were found to have syphilis (table 6).

The changing trends in case reporting, as seen in table 1, are produced by such conditions as the marked decline in lesion syphilis, the increase in latent syphilis, and the increasing use by the private practitioner of such effective remedies as penicillin and other antibiotics. In the diagnosis of syphilis, the laboratory plays a vital role. All laboratories in the city are required to report positive findings to the health department. This is an important factor in the completeness of syphilis morbidity reporting. Unfortunately, the laboratory is not uti-

**Table 6. Venereal disease among women examined in Women's Court, New York, N. Y., 1943-54**

Year	Number examined	Percent infected		
		Syphilis	Syphilis and gonorrhea	Gonorrhea
1943.....	4,595	10.0	5.8	29.0
1944.....	4,448	9.1	5.5	28.4
1945.....	4,814	9.4	6.5	25.7
1946.....	4,038	14.7	6.6	16.9
1947.....	3,588	14.8	5.9	18.6
1948.....	3,685	12.9	4.2	17.5
1949.....	3,269	13.1	2.8	13.6
1950.....	2,999	8.3	1.2	10.8
1951.....	2,681	9.8	.6	5.3
1952.....	2,268	11.0	.8	5.9
1953.....	2,306	7.1	.3	5.8
1954.....	2,448	2.9	.2	5.6

lized to the same extent for the diagnosis of gonorrhoea, a fact which helps to explain the paucity of gonorrhoea morbidity reports from private practitioners.

### Conclusions

Reductions in reported cases of early syphilis, gonorrhoea, and other venereal diseases have occurred in New York City since the end of World War II. Our public health control programs have skillfully combined community resources to include in our venereal disease combat teams the private practitioner of medicine; personnel of hospitals and clinics; educational institutions; social and welfare agencies; the voluntary organizations, such as the New York Tuberculosis and Health Association, Inc., and the American Social Hygiene Association; the clergy; and the Armed Forces, coordinated by the official health agencies and with, above all, an informed public.

Further reductions in venereal disease incidence will be difficult to achieve in an area such as New York City, which is not only a focal point for traffic from all parts of the United States but, in addition, is a global seaport and airport. Population movement from within the country, coupled with the increasing international traffic into the area, constitute problems beyond any local public health control.

These and other special problems peculiar to a great metropolis point to the necessity for

maintaining a vigorous program for the continued control of venereal disease.

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